IOWA STATE UNIVERSITY
Agricultural and Biosystems Engineering

Daniel S. Andersen

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Education

Ph.D. Agricultural Engineering, 2012
Iowa State University

M.S. Agricultural Engineering, 2008
Iowa State University

B.S. Mechanical Engineering, 2006
University of Wisconsin – Platteville

Honors and Awards

Iowa Section Newcomer Engineer of the Year (2014)

ASABE Reviewer of the Year (2013)

Iowa Section ASABE Outstanding Ph. D. Student in Agricultural Engineering (2010)

ISU Teaching Excellence Award (2009)

Alpha Epsilon (2009)

Tau Beta Pi (2004)

Recent Publications

Andersen, D.S., M.J. Helmers, R.T. Burns. Phosphorus sorption capacity of six Iowa soils before and after five years of use as vegetative treatment areas. *Applied. Eng. In Ag.* (In Press)

Andersen, D.S., M.B. Van Weelden, S.L. Trabue, & L.M. Pepple. 2015. Lab-assay for estimating methane emissions from deep-pit swine manure storages. *Journal of Environmental Management* 159: 18-26.

Regan, K.B. & **D.S. Andersen**. 2014. What is it worth? The economic value of manure testing. *Trans. of the ASABE* 57(6): 1845-1852.

Andersen, D.S., R.T. Burns, M.J. Helmers, and L.B. Moody. 2014. Vegetative treatment system impacts on groundwater quality. *Trans. of the ASABE*. 57(2): 417-430.

Andersen, D.S., R.T. Burns, L.B. Moody, M.J. Helmers, B. Bond, I. Khanijo, and C. Pederson. 2013. Impact of System Management on Vegetative Treatment System Effluent Concentrations. *Journal of Environmental Management* 125: 55-67.

J.F. Baker, **D.S. Andersen**, R.T. Burns, and L.B. Moody. 2013. The use of phosphorus sorption isotherms to project vegetative treatment area life. Trans of the ASABE 56(3): 935-945.

Andersen, D.S., R.T. Burns, L.B. Moody, M.J. Helmers. 2011. Using total solids concentration to estimate nutrient content of feedlot runoff effluent from solids settling basins, vegetative infiltration basins, and

Research

Dr. Andersen's research interests are in the areas of manure management and water quality. Specifically the areas of manure treatment and utilization, nutrient management planning, field and farm scale soil and water quality monitoring and modeling, and economic evaluations of agricultural practice alternatives. As part of his manure treatment efforts he works on anaerobic digestion systems, nutrient separation and recovery, and integration of physical, chemical, and biological waste treatment methods in agricultural systems. His work has also provided solid experiences in monitoring aspects of the carbon, nitrogen, and phosphorus cycles in agroecosystems, quantifying and mitigating nutrient transport from agriculture, and evaluate the impact of manure application on soil physical and chemical properties. Much of his current work focuses on anaerobic digestion of manures and agricultural residues, nutrient management and conservation, and the control of feedlot runoff, and improved use of manure. His recent worked has provided significant leadership on addressing and diagnosing the causes of foam on the surface of swine manure storages and in developing innovative metrics for improved evaluation of manure management systems.

Extension

Dr. Andersen's extension program focuses on the areas of manure treatment, management, and utilization. He believes in putting the land-grant mission to work by closely linking his research program to his outreach efforts, striving to demonstrate viable solutions and get them in the hands of those who need them. He leads the Iowa Manure Applicator Certification program which annual certifies around 5,000 individuals applying manure in Iowa. He maintains a blog on manure at themanurescoop.blogspot.com where he provides information on getting the most from your manure and protecting the environment.

Goal

The goal of Dr. Andersen's research and extension work at Iowa State University is to improve soil, water, and air quality by promoting the development and implementation of agricultural manure management systems that are environmentally sustainable, economically feasible, and socially acceptable through the use of extension programming, state-wide training, and a mix of fundamental and applied research.